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DOI: https://doi.org/10.1016/j.gloenvcha.2014.01.007

Constructed Peer Groups and Path Dependence in International Organizations: The Case of the International Climate Change Negotiations

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Published in: Global Environmental Change 25(2014): 109-120

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Keywords

Climate change; UNFCCC; Regime design; International negotiations; Multilateral environmental agreements; Differential treatment.

Acknowledgements

This article was written while the second author was on a stay as a research assistant in the framework of the research project "Negotiating Climate Change" conducted jointly by researchers from the ETH and the University of Zurich. Financial support by the Swiss Network for International Studies (SNIS) is gratefully acknowledged. We also wish to thank Liliana Andonova, Tobias Böhmelt, Axel Dreher, Fabrizio Gilardi, Pierre-Guillaume Méon, Michael Tierney, Lawrence Broz, Frank Schimmelfennig, two blind referees and the editor of GEC who provided very helpful comments that substantially improved the paper.

Constructed Peer Groups and Path Dependence in International Organizations:

The Case of the International Climate Change Negotiations

1. Introduction

A large body of research tries to answer why some intergovernmental organizations are effective in terms of achieving their stated goals while others are not (Breitmeier et al., 2011; Levy, 1996; Miles, 2002; Mitchell, 2002, 2006; Underdal and Young, 2004; Vollenweider, 2012; Weiss and Jacobson, 1998; Wettestad, 1997; Young, 1992, 1999a). Several studies also examine the role of intergovernmental organizations in their member states' socialization with particular norms and roles. A Special Issue in International Organization, for example, analyses how the European institutions affect member states' interests and behavior (Checkel, 2005a). Pevehouse (2002) assesses effects of membership to intergovernmental organizations on democracy levels of members. Bearce and Bondanella (2007) investigate whether common membership to intergovernmental organizations leads to interest convergence between members. Greenhill (2010) looks at the effect of membership on human rights practices of states.

When it comes to the assessment of more specific institutional features of the individual intergovernmental organizations, and their effect on bargaining and cooperation within them, the number of studies becomes more limited. Some studies examine the effect of specific voting rules or the role of the chair of a negotiation (Odell, 2005; Susskind, 1994; Tallberg, 2006). A few others have considered differentiated rules for different countries, an institutional clause frequently used especially in multilateral environmental agreements. These studies are most closely related to our study and will thus be discussed further below. Crucially, this research has so far relied mostly on single or few case studies to draw inferences, so that virtually no systematic empirical research has been done on how initial institutional provisions affect member states' future cooperation within multilateral agreements, and hence the dynamics of the multilateral negotiation process over time.

This is quite surprising as the theoretical institutionalist literature has long argued that the design of intergovernmental organizations affects their ability to promote cooperation (Keohane et al., 1993; Peterson, 1997). There is a broader literature on the effect of treaty design on bilateral bargaining, cooperation and conflict over shared resources, for instance in

the area of water-related agreements (e.g. Fischhendler, 2008a, 2008b; Tir and Stinnett, 2012). But again, this literature primarily focuses on questions of implementation and compliance rather than effects on the future dynamics of the negotiation process itself.

In this article, we consider the effect of particular features of institutional design on future bargaining behavior by member states within an intergovernmental organization, and thereby, on the organizations's future development. We consider that the way in which such an agreement is designed may affect state interests and behavior, even if this was not intended in the first place. In other words, we do not assess whether certain institutional features effectively serve the purpose they were designed for. Rather, we consider the structural side-effects of institutional design. This will be assessed at the example of the negotiations under the United Nations Convention of Climate Change (UNFCCC).

The choice of the UNFCCC is motivated by existing anecdotal evidences. The initial agreement led to the Convention's so-called 'Annex I' listing a number of OECD and transition countries as a means of differentiating them from 'non-Annex I' countries with respect to their greenhouse gas reduction and reporting commitments. Reportedly, this distinction has become more and more politicized and rigid over time and created an unintended and unnecessarily deep divide between the two groups of countries (Baumert et al., 1999; Baumert et al., 2002; Gupta, 2010; Höhne, 2005, p. 37). Analysts of the UNFCCC process have indeed described the creation of the Annex I / non-Annex I division of the world as "amateurish" (Gupta, 2010, p. 641), and the related North-South dynamics as "dysfunctional" and "the regime's greatest weakness" (Depledge and Yamin, 2009, p. 443).

Legal scholars have examined such country differentiation in intergovernmental organizations from a normative perspective (for example Rajamani, 2000, 2006). Political scientists have discussed the relevance of such – or similar – flexibility provisions for regime effectiveness (Andresen and Wettestad, 1992; Fischhendler, 2008a, 2008b; Koremenos et al., 2001; Kucik and Reinhardt, 2008). However, the analysis of the effects of such differentiation on the future negotiation process is at least equally relevant. As noted by John Odell in a recent review of the negotiations literature, there is a general lack of research combining the insights of macro conditions and micro processes of negotiation. He thus explicitly calls for the introduction of "hypotheses about how international institutional differences (as conceived by either rationalists or constructivists) affect individual negotiator behavior" (Odell, 2013, p. 40).

We respond to this call by drawing from both, institutionalism and negotiation research, and propose a "constructed peer group" hypothesis, whereby the "constructed" peer group is itself an institution created within an intergovernmental organization. Our hypothesis suggests that once these groups are constructed and institutionalized, negotiation behavior of countries that are party to the agreement may follow the delimiting lines between these groups. We expect that the group building process itself alters the countries' incentives, and, as a consequence, their negotiation behavior. For instance, countries in groupings initially granted certain exemptions from economic or environmental obligations will have an incentive to lobby for the continuation of this preferential treatment in subsequent negotiation rounds. In addition, creating such country groupings may imply increased discussions within these groups and thereby enhance mutual understanding and support, leading to socialization effects. Eventually, the decision to form specific country groups may drive the discussions in a different direction than they would have taken otherwise and render future broad-based international agreements even more difficult. If this is the case, then more attention needs to be paid to these aspects of regime design right from the beginning.

Empirically, we assess to what extent the ex-ante categorization of member countries to the UNFCCC may indeed have amplified the divide between them. The empirical challenge is to differentiate between the effect of institutionalized groupings and the impact of policy preferences that can be explained by different country characteristics. To do so, we examine the factors leading countries to openly express support for other countries' positions during the UNFCCC negotiations from December 2007 to December 2009. Based on summaries of the negotiations published in the Earth Negotiations Bulletin (ENB), we code all statements by countries declaring support for other countries' previous interventions. We then assess the impact of Annex I membership and various country characteristics on this variable in a multivariate censored regression framework. We complement this analysis with propensity score matching, which allows us to relax the functional form assumptions and to limit our comparison to actually comparable countries – thereby eliminating a potentially important source of bias.

In the following, we first describe how differential treatment has been implemented in other intergovernmental organizations, and propose a theoretical framework describing our "constructed peer group" hypothesis linking it to existing incentive-based and sociological arguments from the literature. Then we describe how this discussion applies to the particular

case of the UNFCCC. After explaining the data and our empirical estimation approach, we present the results, conclusions, potential policy implications, and ways forward in research.

2. Theory and literature

2.1 Differential treatment of parties to multilateral environmental agreements

The UNFCCC is not the only intergovernmental organization that has adopted differentiated rules for groups of countries. In fact, several other multilateral environmental agreements, including the 1982 United Nations Convention on the Law of the Sea, the 1983 International Undertaking on Plant Genetic Resources, the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, the 1992 Convention on Biological Diversity and the 1994 United Nations Convention to Combat Desertification, have incorporated the notion of differentiated responsibility of states with respect to the protection of the environment, based on the recognition already in Principles 6 and 7 of the Rio Declaration (UN, 1992), of the future development needs of poor countries, of other special needs and circumstances of countries, and of the different contribution of countries to the specific environmental problem at hand. The resulting differential treatment usually consists of less stringent obligations, different timing of the application of provisions, and international assistance in terms of financing, capacity building or technology transfer (Hepburn and Ahmad, 2005; Matsui, 2002).

Beyond the environmental domain, the World Trade Organization also has "Special and Differential Treatment" provisions, which are based on the notion that countries at different levels of development have different trade policy needs (Page and Kleen, 2005). The 1979 Enabling Clause formally established differential treatment for developing countries and, among them, for Least Developed Countries. In recent negotiation rounds on specific trade areas, depending on different criteria, various sub-groups of developing countries have been granted preferential treatment. In this context, it has been noted that the existing country categories have become rigid and are being considered as negotiation goals themselves. As a result, akin to the situation under the UNFCCC, there has been a discussion about how to make the differential treatment more dynamic and how to establish differentiation categories and graduation rules to allow this flexibility (see e.g. Hoekman et al., 2004; Hoekman and Özden, 2006; Kasteng et al., 2004; Page and Kleen, 2005).

It is thus clear that differential treatment provisions have become a relatively common feature of intergovernmental organizations. However, the extent of their rigidity varies across agreements (see Rajamani 2006, p. 119 for a first classification of multilateral environmental agreements along these lines). The UNFCCC is the sole example where country groups are fixed independently of any changeably characteristics. Even membership in the group of least developed countries can change over time, whereas the list of Annex I countries has no link to any criteria of income, growth, or whatsoever. It thus represents an extreme case, but, at the same time, a unique opportunity for empirical analysis: Only when country groupings are not directly linked to country characteristics, a clean distinction between the effects of the two can be made.

Before we get to the empirical part, however, we explain our theoretical understanding of why and how differential treatment could have an effect on future bargaining and cooperation.

2.2. A theory of why institutionalized groupings could affect the future negotiation process: the constructed peer group hypothesis

Clearly, countries' characteristics and related preferences affect the positions they take up and express in multilateral negotiations, the statements they approve of, and, eventually, the outcomes of the negotiation process. Countries within distinct groups usually share some economic, political or geographical characteristics, and these similarities lead to common positions on certain policy issues at stake.

However, as suggested by institutionalist theory, over and above the effect of similarities in country characteristics and related preferences, the existence of institutionalized country groupings may have an effect of its own. We call this the "constructed peer group" hypothesis. The construction of such groups by the regime itself (in contrast to country coalitions formed voluntarily to defend common positions) results in new commonalities among their member countries, which lead on the one hand to new incentives to "fight" for common goals, and on the other to a group identity similar to that of a peer group. This in turn affects the negotiation dynamics, and leads eventually to the persistence of these constructed groups, even for other purposes than those intended initially. We thus expect

path dependence between initial institutional decisions and later negotiation structures and dynamics.

We consider two arguments that back up our hypothesis: (i) new incentives created by the new groups, and (ii) socialization and group psychology. Note that we do not seek to assess the relative importance of these arguments. Our data does not allow us to test them individually. Rather, we consider that they can both motivate our constructed peer-group hypothesis, and it may well be that both are similarly relevant for the phenomenon at hand.

2.2.1 New incentives

New incentives are generated when group formation goes hand in hand with specific privileges attached to group membership. For all group members, the protection of these privileges becomes a new and common objective. For instance, groupings initially granted exemptions from economic or environmental obligations have an incentive to jointly lobby for the continuation of this preferential treatment in subsequent negotiation rounds, or for the expansion of the preferential treatment to other issue areas. Countries in the group with financial or environmental obligations will in turn lobby for the abolishment of the preferential treatment, or for increased flexibility for fulfilling their commitments. In both cases, the common objective strengthens group cohesion.

2.2.2 Socialization and group psychology

Countries in a given group will likely meet more often and exchange positions. The reduced number of participants facilitates the creation of personal relationships between country representatives and the emergence of social capital (Coleman, 1990; Schimmelfennig et al., 2006). Researchers of intergovernmental organizations have adopted these arguments for explaining strengthening ties between all their members. They argue that membership of such organizations creates networks between countries, promotes sharing of information about interests and intentions, and generate a sense of mutual identity that leads to cooperation (Caporaso, 1992; Dorussen and Ward, 2008; Keohane, 1986; Russett et al., 1998; Young, 1999b). The institutional socialization hypothesis further suggests that intergovernmental organizations, by means of formal and informal exchange at meetings,

make member states internalize new norms and rules that are accepted within that organization, affecting their identity over time, thus making their interests converge (Bearce and Bondanella, 2007; Checkel, 1999; Johnston, 2001).

We posit that this should not only happen within an intergovernmental organization as a whole, but even more so within smaller subgroups. The smaller the group and the clearer the similarities of members' preferences at the outset, the stronger should be these effects (Mantzavinos et al., 2004; Olson, 1971). Once a group exists, this reinforces cohesion among its members, and a unified group position is likely to emerge.

Arguably, these psychological and sociological arguments rather apply to individuals than to countries, as pointed out by Johnston (2001, p. 506-507). However, a relevant part of country delegations remains stable over a certain number of years (see for example Michaelowa and Michaelowa, 2012). These delegates sit together in the different subgroups shaping their ideas and their statements on behalf of their countries. We will focus on these statements, and thus the micro-level underpinnings of negotiation theory, in the empirical part of this article.

2.2.3 The result: Deepening of group divisions and institutional path dependence

Both arguments presented above support the hypothesis that, once new country groupings have been institutionalized within an intergovernmental organization, negotiation behavior of parties will make such groups increasingly pervasive in the discussions, deepening the differences and disagreements across groups. Eventually, the decision to form specific country groups may drive the discussions in a different direction than they would have taken otherwise and render broad-based international agreements even more difficult. These results concur with North's theories on institutional path dependence (1990), and with Pierson's argument that "Established institutions generate powerful inducements that reinforce their own stability and further development" (2000, p. 255).

Theoretically, the two effects described should lead to a closeness of group members that goes beyond the ties generated by similar country characteristics and related preferences. Empirically, however, neither of the two effects is easily assessed. As long as group building only generates stronger cohesion among countries anyway linked by homogeneous preferences, the impact of the group itself will be difficult to identify. When a group is

constructed artificially, its members are not necessarily as homogeneous in their preferences. In this case, identification of the group effect becomes possible without tracking its members over time.

The relevance of assessing this potential effect of constructed peer groups lies in the fact that they are designed and decided upon within the international agreement. This implies that their effect can be avoided, if desired, by alternative institutional designs. While setting up such groups may help initially to find consensus on the agreement, this should be balanced against potential disadvantages in the further course of the negotiations. For that purpose, their side-effects need to be properly assessed.

3. Differential treatment under the UNFCCC

"Why shouldn't I date an Annex I guy?" asked Leela Raina in an article written during the UN climate negotiations in Bangkok (Raina, 2009). The Indian climate activist lists a couple of reasons: Annex I guys are not willing to commit, they usually take more space in the relationship, they refuse to finance dinners, they are possessive and want daily records, and they have a consumption-oriented lifestyle. With her article, Raina neatly captures a deep divide between developed and developing countries in international climate policy, which was not foreseen when the UNFCCC was agreed upon.

The ultimate goal of the UNFCCC is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (UNFCCC, 1992, Art. 2). To this aim, all parties commit to publish greenhouse gas inventories and their national climate-related policies and measures, and to cooperate in technology, greenhouse gas sinks management, adaptation, research and education (UNFCCC, 1992, Art. 4.1).

In addition, the Convention stipulates additional efforts for those countries which, in 1992, were recognized as historically responsible for most of the emissions and wealthy enough to bear the mitigation costs. Accordingly, the Convention's first guiding principle is "common but differentiated responsibilities": *"[...] the developed country Parties should take the lead in combating climate change and the adverse effects thereof"* (UNFCCC, 1992, Art. 3.1). The developed countries supposed to take the lead – the then OECD members plus selected countries of the former Soviet Union – were listed in Annex I of the Convention.

Article 4.2 of the Convention defines the objective of returning CO_2 emissions of Annex I countries to 1990 levels by 2000. The Kyoto Protocol in 1997 led to additional binding targets for a list of countries that widely corresponds to UNFCCC, Annex I (Annex B of the Kyoto Protocol). A subset of Annex I countries further agreed to provide climate-related financial support to developing countries (UNFCCC, 1992, Art. 4.3). Clearly, membership to Annex I is tied to costly emission reduction and financial commitments, while membership to 'non-Annex I' is linked to financial, technical and capacity building support, and to potential financial transfers through the carbon market and climate finance.

While some procedural mechanisms for regular revisions of Annex I were foreseen within the Convention, there was no in-built graduation principle. Correspondingly, there has been little change over time. A few European countries joined Annex I in 1997 when they joined the Convention: the Czech Republic and Slovakia (replacing Czechoslovakia), as well as Croatia, Liechtenstein, Monaco, and Slovenia (UNFCCC, 2000). More recently, Malta and Cyprus joined Annex I when they accessed the European Union. Otherwise, changes of the country list in Annex I have proven to be extremely contentious. Except for Malta and Cyprus, no move between non-Annex I and Annex I has taken place so far. In 1998 Argentina and Kazakhstan proposed to take up emission targets (thereby joining Annex I), but this was prevented through the fierce opposition of other developing countries, which feared that this would generate a precedent eventually leading to commitments for developing countries (Grubb et al., 1999, p. 251-252). In 2006, Belarus, being an Annex I party to the UNFCCC, requested an amendment to the Kyoto Protocol to be included in its Annex B with an emissions reduction target. So far, this amendment has not entered into force as the number of parties ratifying it has not been sufficiently high (UNFCCC, 2013).

The distinction between Annex I and non-Annex I countries has become increasingly rigid and extended to more and more contentious issues (Höhne, 2005, p. 37; Höhne et al., 1997, p. 9). In the words of Gupta (2010, p. 641), "the division of the world into developed and developing (based on OECD membership) was amateurish—there were no clear criteria for this division, and this has proved to be a major stumbling block in subsequent periods as countries resisted their inclusion in Annex I (e.g., Turkey) or are reluctant to change their status subsequently."

Thus, initially, listing countries in Annex I was meant to be used only as an interim vehicle to differentiate the emission reduction and related reporting commitments. However, in

practice it may have created a lasting divide between two static country groups. Such a lasting divide can be regarded as a largely unintended consequence of institutional design with an impact on regime effectiveness: in the early 1990s, nobody could foresee how the emission paths of different countries would evolve (see e.g. Levine and Aden, 2008, showing the stark changes in subsequent forecasts of future emission levels for China), how critical addressing these emissions would become for the effectiveness of the regime 20 years onwards, and how difficult it would be to do so due to the institutionalized separation of commitments by Annex I and non-Annex I parties.

The increasing rigidity can plausibly be explained by the "new incentives" and the "socialization and group psychology" effects outlined above. Within the UNFCCC, the creation of the Annex I - non-Annex I distinction generated new incentives because membership in Annex I was linked to costly responsibilities and duties, while non-membership was linked to privileges. For non-Annex I members, this created new stakes, the idea that concessions once obtained should not be weakened, and thus the incentive to fight for the perpetuation of the status quo (Gupta, 2010). This fight takes place by the group as a whole since, in their view, any weakening of the once-defined dividing line between countries with and without commitments will pave the way for further pressure with respect to more and more countries taking up commitments, and eventually, for a suppression of the principle of common but differentiated responsibilities (Corfee-Morlot and Hohne, 2003; Grubb et al., 1999, p. 107-111). At the same time Leela Raina's reasons "not to date an Annex I guy" quoted above show the psychological and ideological divide that has emerged between the two groups.

4. Data and variables

In order to test whether Annex I membership plays a role – over and above country characteristics and preferences – for countries' negotiation behavior, we need to define our understanding of "negotiation behavior" and the relevant country characteristics.

Negotiation behavior encompasses many different aspects of deliberation and strategic action in the negotiations. To handle the concept in our empirical analysis we narrow it down to one measurable dimension: the number of oral statements by countries declaring support

to other countries' previous statements. We assume that openly expressing support for a country's previous statements indicates closeness in terms of negotiation positions.

To generate this variable, we hand-code the negotiation reports published in the ENBs for the UNFCCC Conferences of the Parties (COPs) and intersessional negotiation meetings from December 2007 to December 2009 (IISD, 2007-2009). This time period encompasses a crucial stage of the climate negotiations, which included bargaining on both a second commitment period under the Kyoto Protocol, and a further agreement that would include new provisions on mitigation, adaptation, finance, capacity building and technology transfer, with a view on reaching agreement by December 2009 in Copenhagen. This period thus allows us to include deliberations on a broad range of issue areas in the analysis, which is important to ensure that our general measure of support is not distorted by the specific selection of topics under discussion.

Our coding covers 85 days of negotiation from Bali 2007 to Copenhagen 2009, and 173 participating countries. We aggregate the information on statements on all these conference days into a single observation per country. Formally, if we define z_{ijt} as the variable that counts the instances in which country i makes a statement in support of country j's position during negotiation day t, and n_j as the total number of statements by country j during the negotiations between December 2007 and December 2009, we can express our dependent variables, the percentage of supportive statements, as:

$$y_{ij} = \frac{\sum_i z_{ijt}}{n_j} \cdot 100 \,, \qquad i=1,\ldots,173 \qquad j=1,\ldots,9 \qquad t=1,\ldots,85 \qquad (1)$$

We generate such dependent variables for nine distinct countries and coalitions. The restriction to such a selection is due to the immense data collection effort that would have been necessary if all countries and coalitions had been included on both dimensions. Moreover, as many countries do not speak up much, variation in our final variable would have been low due to multiple zeros. We thus prefer a careful selection of countries and coalitions that are among the most active in the negotiations and simultaneously represent a wide variety of positions. This makes our coding more reliable than for countries that do not

intervene much in plenary and still ensures that all relevant perspectives are taken into account. These nine countries and coalitions are: the EU, the US and Russia, who are among the major Annex I actors; Tuvalu, the Alliance of Small Island States (AOSIS) and the African Group, who represent ambitious developing countries with low emissions but high climate vulnerability; China and India, who are among the most active emerging economies in the UNFCCC; and Saudi Arabia, who as an oil-exporting economy represents special interests within the non-Annex I group. Russia, the US and, above all, Saudi Arabia are known as laggards, while the EU tries to portray itself as a climate frontrunner. Further information about how the statements were coded can be found in the Supplementary Material. Table A1, also in the Supplementary Material, lists the 25 countries and coalitions that were most active in the negotiations in the period of analysis, highlighting the ones that were chosen for this study.

We treat the information obtained as nine different dependent variables. We thus perform separate regressions on how frequently each of these countries/coalitions has been supported by all the other countries participating in the negotiations.

One of the limitations of the dataset is that it only covers the negotiation meetings that are open to external observers. Our analysis works only under the assumption that the behavior of parties in the open negotiations represents their behavior in all meetings. We believe that this assumption is plausible. Open meetings include both plenaries (used mostly to take procedural and formal decisions) and contact groups (issue-specific technical negotiation groups) (Depledge, 2005, p. 104-122). While the real negotiations do not take place in the plenaries, our dataset does include reports of bargaining during technical contact group meetings. In addition, as the plenaries are generally used to either introduce the topics that will be discussed during the following week, or to summarize and debate the progress made during the past negotiation days, positions observed in these meetings should not deviate substantially from the ones expressed behind closed doors. Finally, our variable of interest is not the country position per se, but relational behavior in terms of support for other parties' expressed positions, in which case strategic behavior (such as adopting the winning position to portrait oneself as successful) should be less of a concern.

Table 1 provides some descriptive statistics for these dependent variables. It shows that the average share of statements supporting the selected countries ranges from 0.42% of all US statements to 0.95% of all Chinese statements. These small numbers are driven by the fact

that the most common behavior for most countries is not to react at all on other countries' statements. However, some individual countries have lent considerable support to some others. Most prominently, some countries have explicitly expressed support for about 20% of the statements made by India or China.

Table 1 about here

As we are interested in the effect of Annex I (or non-Annex I) membership on these supportive statements, our central independent variable is a dummy that takes the value of 1 if a country is listed in Annex I of the Convention (data obtained from UNFCCC, 2010b).

The effect of this variable can be easily confounded with the effect of a number of country characteristics that simultaneously influence country preferences and Annex I or non-Annex I membership. The most prominent variables to be considered are those that capture the intentions behind the construction of Annex I, namely a differentiated treatment depending on income and emissions: the UNFCCC's principle of "common but differentiated responsibilities and respective capabilities" implies that countries should mitigate climate change in line with their contribution to the problem (emissions) and with their capability to act (income) (Gupta, 2010). Income is expressed in terms of GNI per capita, as the per capita measure better incorporates the notion of equity and fairness entailed in the Convention's principles than overall income. For emissions we try two specifications, total CO_2 emissions and CO_2 emissions per capita, because there are different theoretical arguments regarding which of these measures should be used (Bakker et al., 2009; Karousakis et al., 2008; Ott et al., 2004). The data comes from UNFCCC (2010a), UNSTATS (2010) and World Bank (2009).

In addition, we consider a large number of variables that capture other potentially relevant country characteristics. Country size (in terms of population) and education (measured as net secondary enrollment) are used to capture realist ideas on the role of a country's power resources and bargaining skills in influencing the negotiations (Keohane and Nye, 1989; Mastenbroek, 1991; Snyder and Diesing, 1977; Steinberg, 2002). Data are from the World Bank (2009). Three other variables model more specifically the delegation's negotiation skills: dummy variables indicating whether the country's national or official language is

English or French because language is frequently considered a barrier for communication and understanding during these technically complex negotiations; the number of memberships to international agreements as an indicator of the country's experience and activity in other international negotiations; and the number of oral interventions during the UNFCCC negotiations between December 2007 and December 2009 as a direct measure of activity within the climate regime. Data on language was obtained from Lewis (2009); membership to international organizations is from the Correlates of War Dataset on International Organizations, version 2.3 (Pevehouse et al., 2004); oral interventions were coded from IISD (2007-2009).

Measures of political freedom and government ideology (left-right) are used to control for the possible effect of ideological influences on country positions and negotiation behavior (for example, left-wing Latin American administrations such as Bolivia and Venezuela tend to use the UNFCCC as a forum to disassociate themselves from what they consider neoliberal imperialism – see Vihma (2010)). Data was obtained from Freedom House (2008) and the Database of Political Institutions 2010 (Beck et al., 2001).

Two indicators of vulnerability to climate change (the composite Environmental Vulnerability Index, and income from agriculture in % of GDP) as well as characteristics related to potential benefits from specific areas under discussion (such as the use of carbon markets, forest cover, the use of renewable energy, or the amount of coal and oil exported by a country) are also included to control for issue-specific interests of parties. Data are from SOPAC (2010), World Bank (2009), UNEP Risoe Centre (2010), FAO (2005), US Energy Information Administration (2010) and UN Comtrade (2010), respectively.

Finally, we consider the role of bilateral political and/or economic relationships in other areas such as aid, trade, colonial past or voting in the UN General Assembly (Barbieri and Keshk, 2010; Barbieri et al., 2009; Baumann et al., 2013; DAC, 2007; Dreher, 2008), as these variables might influence the relationships of parties in the climate regime and thus their behavior in terms of agreeing with other parties' positions.

If not otherwise indicated, all of these variables are measured for the year 2007, the start of the coding period for our dependent variables. Since country coalitions are included as single observations along individual countries, we generate values for the respective variables by using the averages of their member countries. Only in the case of population, which is included to represent a country's power, we use the sum to reflect the overall size of the

coalition. The data is generally complete. For a few variables, we replace some missing values by linear imputation using related indicators (such as gross secondary enrolment to impute for net secondary enrolment).

Table 2 compares the country characteristics of Annex I and non-Annex I countries on the basis of key selected controls. Table A2 in the Supplementary Material presents a more complete description of all variables, their descriptive statistics and data sources.

Table 2 about here

On average, Annex I and non-Annex I countries do indeed differ on many characteristics that may be relevant for their preferences and their statements in the negotiations. As expected, on average, Annex I countries are considerably more advanced economically and in terms of education. They also tend to be more democratic as indicated by a considerably lower Freedom House index. Emission levels are higher, and vulnerability to climate change is less prevalent. Annex I countries also tend to be members of more international agreements and participate more actively in the UNFCCC discussions.

Despite all these differences in means, the range of values for these variables indicates that there is a wide overlap between Annex I and non-Annex I. Within Annex I, GNI per capita for instance, ranges from 6 830$ (PPP) for Ukraine to 107 549$ for Liechtenstein. Within non-Annex I, it ranges from 280$ for Liberia to 78 851$ for Qatar. While the poorest non-Annex I countries and the richest Annex I countries do not find an appropriate match, a number of countries have incomes that are comparable between the two groups. The same is true for all other variables in Table 2.

All in all, this comparison highlights the importance of an appropriate control for these factors in our empirical estimation. Moreover, it indicates that the overlap between both groups should be strong enough to allow us to refine the estimation strategy by matching a set of truly comparable countries, in order to test the robustness of our results.

5. Estimation methods

In order to test the effect of Annex I membership we first run multivariate regressions controlling for the context variables described above. We use a tobit model to take into account that the percentage of supportive statements is censored at zero. While theoretically the dependent variable is also censored at 100, all our observations are well below this threshold, so that we do not need to account for censoring from above. In a second step, we use propensity score matching to test the robustness of our results.

In principle, the advantage of regression analysis is that we get an impression of the effect of our control variables, along with our explanatory variable, so that we can get an idea of the plausibility of the model as a whole. Unfortunately, correlations between the different right hand side variables are very high (see Table A3 in the Supplementary Material) so that we can make sense of the coefficients only when we avoid entering too many variables at once. Since all of the considered variables appear theoretically relevant as controls we revert to a mechanical forward selection procedure including all variables with p-values ≤ 0.2. Only our central dummy variable for Annex I membership is included per default, independently of this threshold.

A further problem with the regression analysis may be undue extrapolation that leads us to compare countries that are not really fully comparable. As discussed above, a number of countries within Annex I and non-Annex I do not find appropriate matches in the other group and regression results may be problematic if they are driven by these observations. In addition, the preoccupation with multicollinearity may lead us to omit relevant control variables thereby trading off the unbiased coefficients of the Annex I dummy against the overall interpretability of regression results. And finally, besides the assumptions of normality of residuals and homoscedasticity, which are critical for the tobit to be consistent, regression analysis also presupposes a linear relationship between the percentage of supportive statements and the right hand side variables while our theoretical framework provides no indication that the relationship should necessarily be linear.

To take these issues into account, we also proceed with a nonparametric matching analysis. We consider Annex I membership as a "treatment" D to which the country (or coalition) is subjected. The empirical strategy attempts to select other countries as controls that correspond in their characteristics to those countries that received the treatment. If all variables X simultaneously influencing the decision about which country is part of Annex I (the treatment) and the share of supportive statements (the outcome) are taken into account,

the "selection on observables" (Heckman and Robb, 1985) or "conditional independence" assumption (Lechner, 1999) is satisfied and the impact of Annex I membership can be identified.

As demonstrated by Rosenbaum and Rubin (1983), the estimation of the treatment effect can be facilitated if the information incorporated in the relevant control variables is first projected into a single variable, the propensity score $p(x)=P(D=1|X=x)$. If matching on X is consistent, matching with respect to the propensity score $p(x)$ is consistent as well. The multidimensional problem of matching on X is thereby reduced to the one-dimensional problem of matching on $p(X)$. The propensity score is estimated by a probit regression of the binary treatment variable "Annex I membership" on X.

The control variables X are selected on the basis of the common relevance for selection into Annex I and for supportive statements. The latter is based on the results of the tobit model. To ensure that the conditional independence assumption is satisfied, we also look at the correlates of Annex I. Just as in the case of the tobit regressions, we do so by first identifying a large number of theoretically plausible variables which we then reduce to a smaller number running a mechanical statistical selection procedure, setting the cut-off at a p-value of 20%, and carrying out both, forward and backward selection eventually using all variables that have been included in either of the two. In addition, we include some variables that appear particularly pertinent from the tobit regressions.

For the estimation of the conditional expectation function we use nearest neighbor matching with the five nearest neighbors, this is, we compare each observation for an Annex I country, with the five non-Annex I observations that have the most similar propensity score, and vice versa. We opt for nearest neighbor matching because this algorithm generated the matches with the lowest differences between treated and untreated countries.

6. The impact of Annex I membership: Results

Table 3 presents the results for the parsimonious regressions relying on the limited set of control variables selected as discussed above. Numbers represent the marginal effects estimated at the means of the sample, i.e.:

$$\frac{\partial E(y_{ij})}{\partial x_{ij}} \quad , \qquad \text{with } y_{ij}=0 \text{ if } x_{ij}'b_j + u_{ij} \leq 0, \text{ and } y_{ij} = x_{ij}'b_j + u_{ij} \text{ otherwise,}$$

whereby x_{ij} denotes the vector of right hand side variables for country i in regression j (considering the statements by country i in support of the positions of country j), b_j is the vector of parameter estimates in regression j, and u_{ij} is the corresponding error term. In Tables B2-B3 of the Supplementary Material, we also report marginal effects for strictly positive values of y_{ij}. Such marginal effects show the effect of our explanatory variables on the percentage of statements supporting country j by those countries i that at least expressed such support once. In these models the observed relationships are even stronger than in Table 3, both substantively and in terms of statistical significance.

Table 3 about here

Table 3 shows that even after controlling for a number of relevant control variables, membership to Annex I remains significant in seven out of nine regressions. The direction of the effect of membership to Annex I is as expected: coefficients are positive for the EU, USA and Russia, and negative for the Alliance of Small Island States, the African Group, Tuvalu, China, India and Saudi Arabia. This implies that, after controlling for country characteristics that may make their preferences and positions similar, Annex I members more frequently support other Annex I members (EU, USA and Russia), but less frequently support those countries or coalitions that are not part of Annex I (all the others). The size of the coefficients is substantial in several cases. For example, the expected percentage of statements supporting Russia is about 4 percentage points larger for Annex I countries than for non-Annex I countries. This corresponds to about two standard deviations. The EU is supported 48% of a standard deviation more frequently by Annex I than by non-Annex I countries. In the case of the Alliance of Small Island States, the African Group, Tuvalu, China and India, the percentage of supportive statements is between 15 and 24% of a standard deviation smaller for Annex I than for non-Annex I countries. In the case of Saudi Arabia, both the size of the coefficient and the statistical significance indicate that there is no important effect of being in Annex I. This is in line with the observation that Saudi Arabia

frequently blocks progress in the negotiations, and thus neither Annex I nor most non-Annex I countries usually support its views.

The signs of our central control variables correspond to what we should expect: Countries who generally intervene more frequently in the negotiation process also do so more frequently in support of other countries' arguments. English speaking, larger countries and countries with better education and more participation in international organizations also tend to make more supportive statements (in the case of the small island states, the negative effect of education may be related to a high support by other poor and vulnerable countries, such as the least developed countries, which also display low levels of education). French speaking countries tend to make fewer supportive statements, likely due to language barriers. The fact that countries with more CO_2 emissions appear to show more support for the non-Annex I countries in our sample may be related to the fact that the largest emitter – China – belongs itself to non-Annex I.

We also observe that more democratic countries tend to support the EU's opinions more, but also those of the Alliance of Small Island States and Tuvalu. This may be related with public opinion in these countries expressing concern about the effects of climate change on small island states. More vulnerable countries lend less support to the EU and Russia, probably due to their – in the view of vulnerable countries – insufficient commitment towards deeper emission cuts. Countries with a high share of renewable energy tend to lend less support to China, India and Saudi Arabia, which is not surprising, since these are mainly European and other Annex I countries. It is also interesting that the variable measuring agreement with the US in the UN General Assembly, which is highly correlated with our Annex I dummy, has a large negative effect on support for China and Saudi Arabia, but that at least for China, the effect of Annex I is still noticeable and significant.

Thus, overall, the results of the regressions appear reasonable and increase our confidence in the model as a whole and in the selected controls. A table with results for the complete set of control variables is provided for comparison in the Supplementary Material (Table B1). Wald and likelihood ratio tests let us conclude that the inclusion of further variables does not substantially improve the regression fit. Due to the strong multicollinearity, many variables become insignificant individually. However, our most relevant variable indicating the effect of Annex I membership is still significant (with the expected sign) in six of the regressions.

Robustness checks included using total GDP instead of total population and CO_2 emissions per capita instead of total emissions, and generating the population value for the country coalitions using the mean rather than the sum. We also tried dropping the country coalitions from the dataset; taking logs from the dependent variable and from the variables number of interventions, population and CO_2 emissions to account for skewness; using factor analysis to simplify our set of independent variables instead of the forward selection procedure described above; and transforming the main control variables into Euclidean distances. Our theory provides no indication of the functional form of the effect of country preferences on the amount of supportive statements made. So far, we have assumed a linear relationship. It could also be the case that a measure of distance between the preferences of the supporting country and those of the supported country is more appropriate. This would take into account the fact that countries with significantly less emissions than, say, India may have opinions as different to it as countries with significantly more emissions. This new measure of distance is calculated as the absolute value of the difference between country *i*'s and country *j*'s value for each of the original control variables (with the exception of the variables that were used to represent bargaining ability). The results for our main explanatory variable, Annex I, remain robust to these different specifications, and are available on request.

Hence the tobit regressions clearly indicate a role of Annex I versus non-Annex I membership that holds over and above the influence of relevant country characteristics. When we use propensity score matching as a final robustness check that avoids the limitations of regression analysis described in the previous section, this general result remains the same. Results of the probit estimation of the propensity score are presented in Table B4 of the Supplementary Material. Table 4 presents the comparison of means for different relevant characteristics of Annex I and non-Annex I members before and after the matching procedure.

Table 4 about here

This highly convincing matching result does, however, come at a cost. To compare only those countries that are comparable at all, we impose common support, i.e., we delete all observations from the dataset that were outside the range of characteristics for the

comparison group. Table 5 shows that the actual number of countries that are eventually used in our analysis thereby shrinks considerably to about 39. Moreover, we had to exclude two potentially important variables: number of interventions and voting with the US at the UN General Assembly. As soon as No. of interventions is included in the analysis, the matching procedure is unable to find convincing matches. This may be problematic as the number of interventions is clearly important as a determinant of supportive statements. At the same time, it was generally not significant in the probit regressions we estimated to find the most appropriate equation for the propensity score, as soon as the other variables were controlled for. In addition, there are no theoretical reasons why the current number of interventions in the negotiations should be important for selection into Annex I (which took place in 1992). The variable voting at the UN General Assembly has several missing values among countries within Annex I, which results in an even smaller common support during the matching procedure. However, it was found to be significant only for supportive statements with Saudi Arabia (see Table 3), and we do not have any theoretical reason why voting behavior in the general assembly should influence selection into Annex I. We therefore believe that the conditional independence assumption is satisfied even without inclusion of these variables as controls.

Since Annex I and non-Annex I countries differ in a number of characteristics, the effect of having been selected as an Annex I country (average treatment effect on the treated) and the effect of being selected among current non-Annex I countries (average treatment effect on the untreated) may be different so that it may be interesting to look at both. The results of our nonparametric matching estimator for both the average treatment effect on the treated and on the untreated are presented in Table 5. The matching analysis was carried out using the Stata module prepared by Leuven and Sianesi (2003).

Table 5 about here

Our results show that, at least for statements in support of some countries (Russia, African Group, Tuvalu, India and Saudi Arabia) either the average treatment effect on the treated or the average treatment effect on the untreated (or both) are significant. In some other cases, the estimates are close to significant at the 10% level (for example, the average treatment

effect on the treated for the Alliance of Small Island States, with a t-value of 1.46, and the average treatment effect on the untreated for Saudi Arabia, with a t-value of 1.63). Even for a very restricted set of comparable countries, and when comparing each country only to those countries that are the most similar in all relevant country characteristics, it appears that the effect of Annex I membership cannot be neglected. All significant treatment effects are sizeable and show the expected sign. With 5.4 percentage points, the average treatment effect on the treated corresponds to 2.8 standard deviations of the support for Russia, and with -2.9%, the average treatment effect on the treated corresponds to 1.4 standard deviations of support for India. In the other cases with significant treatment effects, these correspond to 50-100% of the standard deviations. Even in cases where the effect is not statistically significant, it is sizable: in the EU and USA, the average treatment effect on the treated corresponds to 1.2 and 0.8 standard deviations of support, respectively. Thus, while the matching exercise – through the reduction in the number of observations – led to lower levels of significance, the estimated impacts are even higher than in the tobit regressions.

This implies that the split between Annex I and non-Annex I membership has indeed been responsible for some of the negotiation dynamics observed during the UNFCCC negotiations. Since, at given country characteristics, Annex I countries tend to support other Annex I countries, while non-Annex I countries tend to support them less, the mere existence of the split between Annex I and non-Annex I seems to have amplified the existing divide between developing and industrialized countries. More generally, this implies that the creation of new country groups within an international negotiation process has institutional consequences that require some in-depth reflection. Short-term agreements found via differential treatment of specific country groups may come at a cost during later negotiation rounds.

6. Conclusions, policy recommendations, and perspectives for further research

International organizations sometimes institutionalize country groupings by specifying differentiated rules and commitments that may, in turn, generate new negotiation dynamics. We propose a theoretical explanation for such dynamics through our “constructed peer group hypothesis” and advance two complementary theoretical arguments in its support, namely new incentives and socialization.

Our empirical analysis does not allow us to distinguish between these two causal mechanisms. However, it allows us to present a first systematic test of the idea that state interests and negotiation behavior within an intergovernmental organization are influenced by this form of institutional design. Looking at constructed groups of countries with heterogeneous preferences allows us to disentangle this peer group effect from the effect of similarities in initial preferences.

Empirically, using multivariate tobit regressions and propensity score matching, we find that, over and above the ex-ante differences in country characteristics and preferences, the split between Annex I and non-Annex I countries has indeed influenced negotiation behavior in the UNFCCC and thereby amplified the existing divide between developing and industrialized countries. The deliberate creation of new country groups in the institutional design of the UNFCCC has thus had long-term consequences for the future development of the negotiations within the organization. This confirms some of the results of earlier, more descriptive studies of the climate regime. More generally, this provides some initial empirical support of our constructed peer group hypothesis, and thereby the idea of path dependence for negotiation structures and dynamics.

These results imply that, in the future, paying more attention to institutional design could strengthen intergovernmental organizations' contribution to achieving their goals within the international community. If initial differentiation is necessary to achieve an agreement in the first place, this differentiation should be institutionalized in a way that minimizes detrimental effects on future developments. In this context, differentiation on the basis of clear criteria and the specification of transparent 'graduation rules' should be preferred to rigid country lists. Our results thus confirm Rajamani (2006) conceptual argument that differential treatment needs to work within a controlled framework, in which it does not obstruct the general purpose of the treaty, but responds to real differences across countries and ceases to exist when these differences cease to exist. At the same time, it may be helpful to establish institutional structures that channel the formal and informal negotiations in an open, transparent and inclusive way, and to build bridges between different groups.

Which of the above policy recommendations are most conducive to effective and dynamic intergovernmental organizations also depends, at least to some extent, on whether the socialization or the new incentives effect is the main driver of the constructed peer group hypothesis. It may be worthwhile to explore these questions in further research based on

time series data. To reach stronger and more general conclusions, further research could also compare the case of the UNFCCC to other intergovernmental organizations. Since differential treatment has become a relatively common feature of international treaties even beyond the environmental domain, future research could explore the variation in the specifications of this provision across institutional arrangements to deduce more concrete advice for effective intergovernmental organizations. Together with an extension of this study to account for potentially changing effects over time, for possible differences across issue areas within a regime, and for a larger set of country dyads, this would provide an important test of the reliability and validity of our results and bring us a significant step forward in the analysis of successful institutional design. Through the theoretical description of the constructed peer group effect, and its first concrete estimation in the context of the UNFCCC, this paper thus opens up a number of interesting avenues for future research.

References

Andresen, S., Wettestad, J., (1992) International Resource Cooperation and the Greenhouse Problem. Global Environmental Change 2, 277-291.

Bakker, S.J.A., van Asselt, H., Gupta, J., Haug, C., Saidi, R., (2009) Differentiation in the CDM: options and impacts. Netherlands Environmental Assessment Agency, Bilthoven.

Barbieri, K., Keshk, O., (2010) Correlates of War Project Trade Data Set Codebook, Version 2.01. http://correlatesofwar.org (accessed 11 October 2010).

Barbieri, K., Keshk, O., Pollins, B., (2009) TRADING DATA: Evaluating our Assumptions and Coding Rules. Conflict Management and Peace Science 26, 471-491.

Baumann, M., Berthélemy, J.-C., Michaelowa, K., (2013) Von Lomé bis Cotonou: Der Stellenwert von Armutsbekämpfung und guter Regierungsführung in der Entwicklungspolitik der Europäischen Union zwischen 1980 und 2006, in: Faust, J., Michaelowa, K. (Eds.), Die politische Ökonomie der Entwicklungszusammenarbeit. Nomos, Baden Baden, pp. 197-239.

Baumert, K., Bhandari, R., Kete, N., (1999) What might a developing country climate commitment look like? World Resources Institute, Washington, D.C.

Baumert, K., Blanchard, O., Llosa, S., Perkaus, J., (2002) Building on the Kyoto Protocol: Options for Protecting the Climate. World Resources Institute, Washington, D.C.

Bearce, D.H., Bondanella, S., (2007) Intergovernmental organizations, socialization, and member-state interest convergence. International Organization 61, 703-733.

Beck, T., Clarke, G., Groff, A., Keefer, P., Walsh, P., (2001) New tools in comparative political economy: The Database of Political Institutions. World Bank Economic Review 15, 165-176.

Breitmeier, H., Underdal, A., Young, O.R., (2011) The Effectiveness of International Environmental Regimes: Comparing and Contrasting Findings from Quantitative Research. International Studies Review 13, 579-605.

Caporaso, J.A., (1992) International-Relations Theory and Multilateralism - the Search for Foundations. International Organization 46, 599-632.

Checkel, J.T., (1999) Social construction and integration. Journal of European Public Policy 6, 545-560.

Checkel, J.T., (2005a) International institutions and socialization in Europe [Special Issue]. International Organization 59.

Coleman, J.S., (1990) Foundations of social theory. Belknap Press of Harvard University Press, Cambridge, MA.

Corfee-Morlot, J., Hohne, N., (2003) Climate change: long-term targets and short-term commitments. Global Environmental Change 13, 277-293.

DAC, (2007) Aid Statistics – Data and Databases. http://www.oecd.org/dac/stats/data (accessed 11 October 2010).

Depledge, J., (2005) The organization of global negotiations: constructing the climate change regime. Earthscan, Sterling, VA.

Depledge, J., Yamin, F., (2009) The global climate change regime: A defence, in: Helm, D., Hepburn, C. (Eds.), The economics and politics of climate change. Oxford University Press, Oxford, pp. 433-453.

Dorussen, H., Ward, H., (2008) Intergovernmental organizations and the Kantian peace. Journal of Conflict Resolution 52, 189-212.

Dreher, A., (2008) Data on United Nations General Assembly Voting. http://www.uni-goettingen.de/en/datasets/89555.html - 9 (accessed 11 October 2010).

FAO, (2005) Global Forest Resources Assessment 2005. http://www.fao.org/-forestry/fra/fra2005/en/ (accessed 11 October 2010).

Fischhendler, I., (2008a) Ambiguity in transboundary environmental dispute resolution: The Israeli-Jordanian water agreement. Journal of Peace Research 45, 91-109.

Fischhendler, I., (2008b) When ambiguity in treaty design becomes destructive: A study of transboundary water. Global Environmental Politics 8, 111-136.

Freedom House, (2008) Combined Average Ratings – Independent Countries. http://www.freedomhouse.org/uploads/fiw09/tablesandcharts/Combined Average Ratings %28Independent Countries%29 FIW 2008.pdf (accessed 11 October 2010).

Greenhill, B., (2010) The Company You Keep: International Socialization and the Diffusion of Human Rights Norms. International Studies Quarterly 54, 127-145.

Grubb, M., Vrolijk, C., Brack, D., (1999) The Kyoto Protocol: A guide and assessment. Royal Institute of International Affairs, London.

Gupta, J., (2010) A history of international climate change policy. Wiley Interdisciplinary Reviews-Climate Change 1, 636-653.

Heckman, J., Robb, R., (1985) Alternative Methods for Evaluating the Impact of Interventions, in: Heckman, J., Singer, B. (Eds.), Longitudinal Analysis of Labour Market Data. Cambridge University Press, Cambridge, pp. 156-245.

Hepburn, J., Ahmad, I., (2005) The Principle of Common but Differentiated Responsibilities, Legal Working Paper in the CISDL "Recent Developments in International Law Related to Sustainable Development" Series. Centre for International Sustainable Development Law, Montreal.

Hoekman, B., Michalopoulos, C., Winter, L.A., (2004) Special and differential treatment of developing countries in the WTO: Moving forward after Cancun. World Economy 27, 481-506.

Hoekman, B., Özden, Ç., (2006) Trade Preferences and Differential Treatment of Developing Countries. Edward Elgar, Cheltenham.

Höhne, N., (2005) What Is Next After the Kyoto Protocol? Assessment of Options for International Climate Policy Post 2012. Utrecht University, Utrecht.

Höhne, N., Filho, G.M., Marcovitch, J., Yamin, F., Moltmann, S., (1997) History and status of the international climate change negotiations on a future climate agreement. http://www.basic-project.net/ (accessed 29 December 2010).

IISD, (2007-2009) Earth Negotiations Bulletin, 12(343-459). International Institute for Sustainable Develoment, New York. http://www.iisd.ca/vol12 (accessed 18 December 2010).

Johnston, A.I., (2001) Treating international institutions as social environments. International Studies Quarterly 45, 487-515.

Karousakis, K., Guay, B., Philibert, C., (2008) Differentiating countries in terms of mitigation commitments, actions and support, Report COM/ENV/EPOC/IEA/SLT(2008)2. OECD/IEA, Paris.

Kasteng, J., Karlsson, A., Lindberg, C., (2004) Differentiation between developing countries in the WTO, Swedish Board of Agriculture International Affairs Division Report 2004:14 E. Swedish Board of Agriculture, Jönköping.

Keohane, R.O., (1986) Reciprocity in International Relations. International Organization 40, 1-27.

Keohane, R.O., Haas, P.M., Levy, M.A., (1993) The Effectiveness of International Environmental Institutions, in: Haas, P.M., Keohane, R.O., Levy, M.A. (Eds.), Institutions for the Earth: Sources of Effective International Environmental Protection. MIT Press, Cambridge, MA, pp. 3-24.

Keohane, R.O., Nye, J.S., (1989) Power and interdependence, 2nd ed. Harper Collins, New York, NY.

Koremenos, B., Lipson, C., Snidal, D., (2001) The rational design of international institutions. International Organization 55, 761-799.

Kucik, J., Reinhardt, E., (2008) Does Flexibility Promote Cooperation? An Application to the Global Trade Regime. International Organization 62, 477-505.

Lechner, M., (1999) Earnings and employment effects of continuous off-the-job training in East Germany after unification. Journal of Business & Economic Statistics 17, 74-90.

Leuven, E., Sianesi, B., (2003) PSMATCH2: Stata Module to Perform Full Mahalanobis and Propensity Score Matching, Common Support Graphing, and Covariate Imbalance Testing. http://ideas.repec.org/boc/bocode/s432001.html (accessed 10 December 2010).

Levine, M., Aden, N.T., (2008) Global Carbon Emissions in the Coming Decades: the Case of China, Report LBNL-372E. Ernest Orlando Lawrence Berkeley National Laboratory, Berkeley, CA.

Levy, M., (1996) Assessing the effectiveness of international environmental institutions. Global Environmental Change 6, 395-397.

Lewis, M.P., (2009) Ethnologue: Languages of the World, Sixteenth edition ed. SIL International, Dallas, Texas.

Mantzavinos, C., North, D.C., Shariq, S., (2004) Learning, Institutions, and Economic Performance. Perspectives on Politics 2, 75-84.

Mastenbroek, W.F.G., (1991) Development of Negotiating Skills, in: Kremenyuk, V.A. (Ed.), International negotiation: analysis, approaches, issues, 1st ed. Jossey-Bass Publishers, San Francisco, pp. 379-399.

Matsui, Y., (2002) Some Aspects of the Principle of "Common but Differentiated Responsibilities". International Environmental Agreements: Politics, Law and Economics 2, 151-170.

Michaelowa, A., Michaelowa, K., (2012) Negotiating Climate Change [Special Edition]. Climate Policy 12.

Miles, E.L., (2002) Environmental regime effectiveness: confronting theory with evidence. MIT Press, Cambridge, MA.

Mitchell, R.B., (2002) A Quantitative Approach to Evaluating International Environmental Regimes. Global Environmental Politics 2, 58-83.

Mitchell, R.B., (2006) Problem Structure, Institutional Design, and the Relative Effectiveness of International Environmental Agreements. Global Environmental Politics 6, 72-89.

North, D.C., (1990) Institutions, institutional change, and economic performance. Cambridge University Press, Cambridge ; New York.

Odell, J.S., (2005) Chairing a WTO negotiation. Journal of International Economic Law 8, 425-448.

Odell, J.S., (2013) Negotiation and Bargaining, in: Carlsnaes, W., Risse, T., Simmons, B.A. (Eds.), Handbook of International Relations, 2nd Edition. Sage, Thousand Oaks, CA, pp. 379-400.

Olson, M., (1971) The logic of collective action; public goods and the theory of groups. Harvard University Press, Cambridge, MA.

Ott, H.E., Winkler, H., Brouns, B., Kartha, S., Mace, M.J., Huq, S., Kameyama, Y., Sari, A.P., Pan, J., Sokona, Y., Bhandari, P.M., Kassenberg, A., La Rovere, E.L., Rahman, A.A., (2004) South–North Dialogue on equity in the greenhouse. A proposal for an adequate and equitable global climate agreement. Deutsche Gesellschaft für Technische Zusammenarbeit, Eschborn.

Page, S., Kleen, P., (2005) Special and Differential Treatment of Developing Countries in the World Trade Organization, Swedish Ministry for Foreign Affairs Global Development Studies 2. Swedish Ministry for Foreign Affairs, Stockholm.

Peterson, M.J., (1997) International Organizations and the Implementation of Environmental Regimes, in: Young, O.R. (Ed.), Global Governance: Drawing Insights from the Environmental Experience. MIT Press, Cambridge, MA, pp. 115-151.

Pevehouse, J.C., (2002) Democracy from the outside-in? International organizations and democratization. International Organization 56, 515-549.

Pevehouse, J.C., Nordstrom, T., Warnke, K., (2004) The COW-2 International Organizations Dataset Version 2.0. Conflict Management and Peace Science 21, 101-119.

Pierson, P., (2000) Increasing returns, path dependence, and the study of politics. American Political Science Review 94, 251-267.

Raina, L., (2009) Why shouldn't I date an Annex-I guy? http://adoptanegotiator.org/-2009/10/07/why-i-shouldnt-date-an-annex-1-guy/comment-page-1 (accessed 10 October 2010).

Rajamani, L., (2000) The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime. Review of European Community and International Environmental Law 9, 120-131.

Rajamani, L., (2006) Differential treatment in international environmental law. Oxford University Press, Oxford and New York.

Rosenbaum, P.R., Rubin, D.B., (1983) The Central Role of the Propensity Score in Observational Studies for Causal Effects. Biometrika 70, 41-55.

Russett, B., Oneal, J.R., Davis, D.R., (1998) The third leg of the Kantian tripod for peace: International organizations and militarized disputes, 1950-85. International Organization 52, 441-467.

Schimmelfennig, F., Engert, S., Knobel, H., (2006) International socialization in Europe: European organizations, political conditionality, and democratic change. Palgrave Macmillan, Basingstoke and New York.

Snyder, G.H., Diesing, P., (1977) Conflict among nations: bargaining, decision making, and system structure in international crises. Princeton University Press, Princeton, N.J.

SOPAC, (2010) Environmental Vulnerability Index (EVI). South Pacific Applied Geoscience Commission, Suva, Fiji. http://www.vulnerabilityindex.net/EVI_Country_Profiles.htm (accessed 12 December 2010).

Steinberg, R.H., (2002) In the shadow of law or power? Consensus-based bargaining and outcomes in the GATT/WTO. International Organization 56, 339-378.

Susskind, L.E., (1994) Environmental Diplomacy: Negotiating More Effective Global Agreements. Oxford University Press, New York.

Tallberg, J., (2006) Leadership and Negotiation in the European Union: The Power of the Presidency. Cambridge University Press, Cambridge, UK.

Tir, J., Stinnett, D.M., (2012) Weathering climate change: Can institutions mitigate international water conflict? Journal of Peace Research 49, 211-225.

UN, (1992) Rio Declaration on Environment and Development. United Nations, Rio de Janeiro.

UN Comtrade, (2010) UN Comtrade Database. http://comtrade.un.org/ (accessed 11 October 2010).

Underdal, A., Young, O.R., (2004) Regime consequences: methodological challenges and research strategies. Kluwer Academic Publishers, New York.

UNEP Risoe Centre, (2010) CDM/JI Pipeline Analysis and Database. http://cdmpipeline.org/ (accessed 11 October 2010).

UNFCCC, (1992) United Nations Framework Convention on Climate Change. United Nations, Geneva.

UNFCCC, (2000) Proposals to Amend the Lists in Annexes I and II of the Convention. UNFCCC Secretariat, Bonn. http://unfccc.int/cop6/issues/110.html (accessed 16 December 2010).

UNFCCC, (2010a) Greenhouse Gas Inventory Data – Detailed Data by Party. UNFCCC Secretariat, Bonn. http://unfccc.int/-di/DetailedByParty/Event.do?event=go (accessed 11 October 2010).

UNFCCC, (2010b) List of Annex I Parties to the Convention. UNFCCC Secretariat, Bonn. http://unfccc.int/-parties_and_observers/parties/annex_i/items/2774.php (accessed 10 October 2010).

UNFCCC, (2013) Amendment to Annex B of the Kyoto Protocol. UNFCCC Secretariat, Bonn. http://unfccc.int/kyoto_protocol/amendment_to_annex_b/items/4082.php (accessed 16 July 2013).

UNSTATS, (2010) Carbon Dioxide Emissions (CO_2), Metric Tons of CO_2 Per Capita (CDIAC). http://unstats.un.org/unsd/mdg/SeriesDetail.aspx?srid=751 (accessed 11 October 2010).

US Energy Information Administration, (2010) International Energy Statistics. http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm (accessed 11 October 2010).

Vihma, A., (2010) Elephant in the Room – the New G77 and China Dynamics in the Climate Talks, Briefing Paper 6. The Finnish Institute of International Affairs, Helsinki.

Vollenweider, J., (2012) The effectiveness of international environmental agreements. International Environmental Agreements: Politics, Law and Economics, 1-25.

Weiss, E.B., Jacobson, H.K., (1998) Engaging countries: strengthening compliance with international environmental accords. MIT Press, Cambridge, MA.

Wettestad, J., (1997) Acid lessons? LRTAP implementation and effectiveness. Global Environmental Change 7, 235-249.

World Bank, (2009) World Development Indicators. CD Rom, Washingon, D.C.

Young, O.R., (1992) The Effectiveness of International Institutions: Hard Cases and Critical Variables, in: Rosenau, J.N., Czempiel, E.-O. (Eds.), Governance without government: order and change in world politics. Cambridge University Press, Cambridge, UK and New York, pp. 160-194.

Young, O.R., (1999a) The effectiveness of international environmental regimes: causal connections and behavioral mechanisms. MIT Press, Cambridge, MA.

Young, O.R., (1999b) Governance in world affairs. Cornell University Press, Ithaca, NY.

Table 1: Statements declaring support for selected countries' positions (as % of their number of interventions)

Percentage of statements supporting:	Obs	Mean	Std. Dev.	Min	Max
USA	173	0.42	1.60	0	10.50
Tuvalu	173	0.44	1.09	0	7.14
EU	173	0.45	1.35	0	8.89
AOSIS	173	0.53	1.43	0	10.39
Russia	173	0.55	1.95	0	12.86
African Group	173	0.60	1.77	0	12.12
Saudi Arabia	173	0.63	1.71	0	15.42
India	173	0.70	2.05	0	20.00
China	173	0.95	2.62	0	20.68

Note: Countries / coalitions sorted by mean support. AOSIS stands for the Alliance of Small Island States.

Table 2: Comparing country characteristics for Annex I and non-Annex I countries

	Annex I				Non-Annex I			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Country size, political and economic development								
Population	114.60	196.43	0.03	680.10	97.29	578.76	0.002	6861.37
GDP	1.68	3.48	0.004	14.00	0.09	0.33	0	3.4
GNI per capita	33.57	23.84	6.83	107.55	7.81	11.36	0.28	78.85
Freedom House index	1.96	1.64	1	6.50	3.77	1.79	1	7.00
Education	88.17	8.71	69.50	103.11	57.83	22.88	2.6	104.54
Emissions								
CO_2 emissions	0.77	1.48	0.002	5.80	0.10	0.55	0.000004	6.5
CO_2 emissions per capita	9.92	4.79	3.91	19.28	3.94	8.24	0.02	76.80
Vulnerability								
Agriculture	4.91	3.58	0	12.20	17.89	14.70	0	76.90
Vulnerability	3.60	0.72	2.73	5.50	3.33	0.77	1.67	5.13
Vulnerability per GDP	0.16	0.13	0.04	0.57	1.61	2.90	0.04	29.72
Factors of interest for specific areas under discussion								
Carbon markets	0.28	0.98	0	4.04	0.05	0.32	0	4.03
Forests	0.30	0.17	0	0.68	0.29	0.24	0	0.95
Renewables	0.25	0.33	0	1.03	0.02	0.12	0	1.18
Negotiation experience and activity								
Intl. agreements	70.89	21.69	20	99.00	56.88	17.18	16	95.00
No. of interventions	133.82	149.99	0	540	23.32	54.40	0	382

Table 3: Determinants of supportive statements (in %)

Support for:	EU	USA	Russia	AOSIS	African Group	Tuvalu	China	India	Saudi Arabia
Annex I	0.646 **	0.362	3.969 ***	-0.215 ***	-0.322 ***	-0.211 ***	-0.538 ***	-0.497 ***	-0.183
No of interventions	0.005 ***	0.001 **	0.001 *	0.006 ***	0.006 ***	0.004 ***	0.015 ***	0.009 ***	0.008 ***
Population	-0.000 ***	-0.000	-0.000	0.000 ***	0.000 *	-0.000 *	0.000 ***	-0.000 *	
GNI per capita	0.003		-0.004 *						0.015 ***
Education	0.002		0.002	-0.005 **					
English language	0.145 **	0.061							
French language							-0.351 ***	-0.412 ***	-0.276 ***
Intl. agreements		0.001		0.006 **			0.014 ***	0.015 ***	0.009 **
CO2 emissions				0.231 ***	0.306 ***	0.088 *	1.157 ***	0.645 ***	0.498 ***
Freedom House	-0.028 *	-0.010		-0.080 ***		-0.092 ***			
Right government									
Left government							0.196		0.287 **
Agriculture									
Vulnerability	-0.123 ***		-0.030						
UNGA voting	0.417						-1.947		-3.353 ***
Colony									
Fossil exports							1.029		
Forests			-0.238 *		0.405	0.244			-0.488 *
Renewables	0.235		-0.214				-1.436 **	-0.697 *	-0.808 *
Carbon markets				0.155		0.118	0.275 *	0.258 *	
Aid from the EU									
Aid from USA		-3.309 **							
Observations	155	154	155	155	155	155	155	155	145
Left censored	103	122	135	107	113	115	96	101	93
Log likelihood	-89	-63	-60	-115	-137	-103	-142	-146	-123
Pseudo R^2	0.475	0.525	0.423	0.355	0.209	0.317	0.390	0.298	0.355

Notes: Tobit regressions, values are for marginal effects, with $y_{ij}=0$ if $x_i'b + u_i \leq 0$, and $y_{ij} = x_i'b + u_i$ otherwise. Significance at the 1%, 5% and 10% level is denoted by ***, ** and * respectively. Constant not reported. For variable descriptions, see Table A2 in the Supplementary Material. AOSIS stands for the Alliance of Small Island States; UNGA stands for the UN General Assembly.

Table 4: Comparison of means before and after matching

Variable	Sample	Mean		%bias	% reduct	t-test	
		Treated	Control		|bias|	t	p>|t|
GNI per capita	Unmatched	28.64	7.47	168.60		6.87	0.00
	Matched	18.60	17.03	12.50	92.60	0.22	0.83
GDP	Unmatched	1.79	0.09	67.00		5.64	0.00
	Matched	0.43	0.58	-5.60	91.60	-0.33	0.75
CO_2 emissions	Unmatched	9.92	3.78	90.60		2.81	0.01
per capita	Matched	8.55	8.11	6.40	92.90	0.11	0.92
CO_2 emissions	Unmatched	0.77	0.10	60.30		3.59	0.00
	Matched	0.37	0.70	-29.60	50.90	-0.44	0.67
Education	Unmatched	87.67	57.28	175.00		5.08	0.00
	Matched	82.58	79.79	16.10	90.80	0.55	0.59
English language	Unmatched	0.40	0.39	2.80		0.10	0.92
	Matched	0.14	0.09	11.50	-314.30	0.31	0.76
French language	Unmatched	0.20	0.23	-6.60		-0.24	0.81
	Matched	0.00	0.06	-13.70	-107.10	-0.60	0.56
Vulnerability	Unmatched	3.41	3.30	17.90		0.57	0.57
	Matched	3.36	3.29	10.50	41.00	0.18	0.86
Renewables	Unmatched	0.27	0.03	95.30		5.84	0.00
	Matched	0.08	0.09	-2.10	97.80	-0.04	0.97
Intl. agreements	Unmatched	76.75	58.01	120.10		4.25	0.00
	Matched	67.29	72.34	-32.40	73.00	-0.58	0.57

For variable descriptions, see Table A2 in the Supplementary Material.

Values between Table 2 and Table 4 may differ due to missing values in some of the variables used in the matching procedure.

Table 5: Estimation results of propensity score matching

% of supportive votes for:	ATT		ATU		off support		on support	
					untreated	treated	untreated	treated
EU	1.606		0.315		115	6	31	8
USA	1.273		0.446		114	7	32	7
Russia	5.388	***	5.503	***	119	7	27	7
AOSIS	-0.903		-0.406		113	8	32	7
African Group	-1.169	*	-0.554		113	8	32	7
Tuvalu	-0.975	**	-0.521	*	113	8	32	7
China	-1.429		-1.142		114	8	31	7
India	-2.885	**	-1.567	**	113	8	32	7
Saudi Arabia	-1.787	*	-1.170		113	8	32	7

Notes: Significance at the 1%, 5% and 10% level is denoted by ***, ** and * respectively. AOSIS stands for the Alliance of Small Island States; ATT stands for the average treatment effect on the treated; ATU stands for the average treatment effect on the untreated.